

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 02SGL0139WOP	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/EP2004/008047	International filing date (day/month/year) 19.07.2004	Priority date (day/month/year) 21.07.2003
International Patent Classification (IPC) or national classification and IPC H01L51/10		
Applicant SCHOTT AG		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of 13 sheets, including this cover sheet.
3.	This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of 6 sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4.	This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input checked="" type="checkbox"/> Box No. VII Certain defects in the international application <input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/008047

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

- ☐ international search (Rule 12.3 and 23.1(b))
☐ publication of the international application (Rule 12.4)
☐ international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

☐ the international application as originally filed/furnished

☒ the description:

pages 1-39 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the claims:

nos. _____ as originally filed/furnished

nos.* _____ as amended (together with any statement) under Article 19

nos.* 1-32 received by this Authority on 23.05.2005 with letter of 20.05.2005

nos.* _____ received by this Authority on _____

☒ the drawings:

sheets 1/11-11/11 as originally filed/furnished

sheets* _____ received by this Authority on _____

sheets* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

4. ☒ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☒ the claims, nos. 32

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 32

because:

☐ the said international application, or the said claims Nos. _____
relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. _____
are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. _____ are so inadequately supported
by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. 32

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.

☐ See Supplemental Box for further details.

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	_____	YES
	Claims	<u>1-3</u>	NO
Inventive step (IS)	Claims	_____	YES
	Claims	<u>1-31</u>	NO
Industrial applicability (IA)	Claims	<u>1-31</u>	YES
	Claims	_____	NO

2. Citations and explanations (Rule 70.7)

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Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Boxes I, V, VII and VIII

The following observations pertain to objections relating to one or more of the boxes checked on the cover sheet.

1 This report makes reference to the following documents:

D1: US 2001/030320 A1 (BUDD RUSSELL ALAN ET AL)
18 October 2001 (2001-10-18)

D2: MOLLER S ET AL: "Improved light out-coupling in organic light emitting diodes employing ordered microlens arrays" JOURNAL OF APPLIED PHYSICS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 91, no. 5, 1 March 2002 (2002-03-01), pages 3324-3327, XP012055958 ISSN: 0021-8979

D3: US-A-5 550 676 (CHIBA ISSEI ET AL)
27 August 1996 (1996-08-27)

D4: US 2001/050736 A1 (WON JONG-HO ET AL)
13 December 2001 (2001-12-13)

D5: US 2003/127973 A1 (WEAVER MICHAEL STUART ET AL) 10 July 2003 (2003-07-10)

D6: MEERHOLZ K ET AL: "OUTSMARTING WAVEGUIDE LOSSES IN THIN-FILM LIGHT-EMITTING DIODES" ADVANCED FUNCTIONAL MATERIALS, WILEY INTERSCIENCES, WEINHEIM, DE, vol. 11, no. 4, August 2001 (2001-08), pages 251-253, XP001072700 ISSN: 1616-301X

D7: US 2002/185968 A1 (OHKUBO KAZUNOBU)

Supplemental Box

12 December 2002 (2002-12-12)

D8: US 2002/122642 A1 (KIJIMA YASUNORI)

5 September 2002 (2002-09-05)

The following documents have been introduced by the examiner in accordance with the PCT Guidelines, paragraph VI-7.24. Copies are attached to this report; the same numbering will be used throughout the procedure:

D9: JP-2003168553

D10: US-B-6 274 978

D11: US-B-6472 817

- 2 The amendments with the letter of 20 May 2005 introduce substantive matter which, contrary to PCT 34(2)(b), goes beyond the disclosure in the international application as filed. The amendments are as follows:

The subject matter of claim 32 is an inadmissible generalization of the lamp element disclosed in figure 15 of the present application. Therefore, claim 32 is inadmissible.

- 3 The application does not meet the requirements of PCT Article 6 because claims 1, 3, 6, 7, 10, 11, 14, 15, 21 and 27-32 are unclear and claim 1 is not supported by the description.

- 3.1 The expression "and/or in which light-scattering structures...can be fastened" used in claim 1 (see

Supplemental Box

lines 10-12) is vague and unclear and leaves the reader uncertain as to the meaning of the technical feature in question. As a result, the subject matter of said claim is not clearly defined (PCT Article 6). Further, since the lamp element is used for the purpose of illumination, the use of light-scattering structures is necessary for the definition of the lamp element (PCT Article 6 in conjunction with PCT Rule 6.3(b)). The above-indicated expression should be deleted in order to meet the requirements of PCT Article 6.

- 3.2 The expressions "and/or", "more particularly" and "for example" used in claims 1, 3, 6, 11, 14 and 21 are vague and unclear and leave the reader uncertain as to the meaning of the technical features in question. As a result, the subject matter of said claims is not clearly defined (PCT Article 6).
- 3.3 Dependent claims 6, 7, 10, 15 and 27-31 are either inconsistent with the subject matter of independent claim 1, with the result that the subject matter of said claims is not clear (PCT Article 6), or comprise a combination of features which are not supported by the description (PCT Article 6) (for example, edge coupling by means of a coupling element (23) is not disclosed).
- 3.4 Although claims 1 and 32 are drafted as separate independent claims, they seem in fact to relate to

Supplemental Box

the same subject matter, the only apparent difference being in the definition of the subject matter for which protection is sought. The claims are therefore not concise. Moreover, the claims display an overall lack of clarity because the number of independent claims makes it difficult, if not impossible, to identify the subject matter for which protection is sought, and it is therefore unreasonably difficult for third parties to determine the scope of protection. Therefore, these claims do not meet the requirements of PCT Article 6.

3.5 Claim 1 is not supported by the description, since it also comprises a device, wherein the OLED plate (that is, the plate-shaped substrate on which the OLED is arranged) could be perpendicular to the light-guiding plate. However, such a device is not supported by the description and the drawings. Claims 4 and 5 would have to be combined with claim 1 in order for claim 1 to be supported by the description.

3.6 The link between substrate and OLED in claim 1 is unclear (that is, the OLED is not claimed on the glass substrate). Moreover, in claim 1 (see line 17) the (glass) substrate and "an" incident light surface are unclear.

4 The present application does not meet the requirements of PCT Article 33(2) because the subject matter of claims 1-3 is not novel insofar

Supplemental Box

as the claims can be understood in view of the above-indicated lack of clarity.

- 4.1 The subject matter of claims 1-3 is not novel in view of the disclosure of D1 (see figures 1(a) and 2 and the corresponding text), in particular because the subject matter of claim 1 does not exclude the possibility that the incident light surface is coupled by means of a coupling element (D1, figure 2, element 30) (see also claim 27).
- 4.2 The subject matter of claims 1-3 is not novel in view of the disclosure of D9 (see the abstract and the drawings), in particular because separate substrates for the OLED and the light-guiding plate (which are glued directly together) are not claimed.
- 5 The present application does not meet the requirements of PCT Article 33(3) because the subject matter of claims 1-3 does not involve an inventive step insofar as the claims can be understood in view of the above-indicated lack of clarity.
- 5.1 The subject matter of claims 1-3 differs from the disclosure of D10 (see figures 6, 7 and 10 and the corresponding text) in that the substrate for the OLED and that for the light-guiding device are plates. This merely represents an obvious alternative for a person skilled in the art which he would choose according to the use of the lamp

Supplemental Box

element.

5.2 The subject matter of claims 1-3 differs from the disclosure of D11 (see figures 8, 9, 10 and 12 and the corresponding text) in that the light-guiding plate is also a substrate. However, this solution would be an obvious measure to a person skilled in the art for the purpose of reducing the materials requirement, provided that the light-guiding plate were sufficiently thick.

6 Dependent claims 4-31, insofar as the claims can be understood in view of the above-indicated lack of clarity, do not contain any additional features which, in combination with the features of any claim to which they refer back, could lead to subject matter which involved an inventive step (PCT Article 33(3), since they claim only known and obvious possibilities which a person skilled in the art would apply according to the circumstances, without thereby being inventive (see D1-D11).

7 Claim 32 has not been examined in regard to novelty and inventive step, since it relates to unsearched subject matter (PCT Rule 70.2(d)).

8 The following points are made for the sake of completeness.

8.1 Independent claim 1 has not been correctly drafted in the two-part form defined by PCT Rule 6.3(b).

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However, in the present case the two-part form would appear to be appropriate. Accordingly, the features known in combination from the prior art should have been placed in the preamble (PCT Rule 6.3(b)(i)) and the remaining features specified in the characterizing part (PCT Rule 6.3(b)(ii)).

- 8.2 Contrary to PCT Rule 5.1(a)(ii), the description does not cite D1-D11 or indicate the relevant prior art disclosed therein.